Instructions for Constructing a Stereoscope

A stereoscope is one instrument that can be used to create the illusion of a 3-D image using stereograms. Stereoscopes and stereograms have been in use for several hundred years, even before photography was invented. In this activity you will construct a stereoscope from materials commonly available from craft stores.

Materials:
- One piece of foam board 15” long, 9” wide and ¼” thick
- Heavy-duty scissors for cutting the foam board
- Metric/English Ruler
- Hot glue gun with hot glue sticks
- Two plastic magnifying lenses with diameters from 2” to 4” (these are readily available from stores that sell items for a dollar)

1. On the ¼” thick foam board, lay out Parts A, B, C and D as shown in Diagram I below.
2. Cut out the four parts along all of the solid lines with heavy-duty scissors.
3. Cut out all of the shaded areas in accordance with the dimensions shown.

Diagram I
Assembly of Parts

1. Use glue (preferably hot glue used by the teacher or adult) to attach the four parts as shown in Diagram III.
2. Slide Part A over Part B such that it stays as close as possible to the end of Part B without falling off Part B.
3. Paste the trophy stereogram (printed on page 4) onto Part A -- one to the LEFT and one to the RIGHT.
4. Hold the two magnifying lenses behind Part B and over the cutout circles. While holding the lenses, look through them toward the trophy stereogram and maneuver the lenses until the two images of the trophy “fuse” together, even though they may continue to be out of focus. Maneuver the lenses by rotating them, moving them left and right, and up and down until the images come together as one (fused). Without getting glue on the surface of the lenses, glue them to the inside of Part B so that the images continue to stay “fused.”
5. With the lenses properly glued in place, slide Part A back and forth until the “fused” images come into focus creating a 3-D image.